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EXAMINER	
CHOI, PETER H	

ART UNIT	PAPER NUMBER
3623	

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/084,834	TANIKOSHI ET AL.	
	Examiner	Art Unit	
	Peter Choi	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The following is a **FINAL** office action upon examination of application number 10/084834. Claims 1-22 are pending in the application and have been examined on the merits discussed below.

Response to Amendment

2. Claims 1-6, 8, 11, 13 and 14 have been amended.

3. The previous rejection of claims 1-22 under 35 U.S.C. 112, second paragraph is withdrawn in view of claim amendments received September 26, 2006.

Response to Arguments

Applicant argues that Dix does not disclose or suggest, "accepting and storing a maintenance service content which a customer has specified from a customer system.." Specifically, the Applicant argues that data is collected and transmitted by the vehicle.

The Examiner respectfully disagrees. The Examiner notes that the Applicant has not provided a definition of "maintenance service content" in the specification or the claim language; thus, for purposes of examination the Examiner has construed "maintenance service content" to be any data or information indicative of

maintenance or required service. Dix teaches that data stored may include numeric values that are remotely downloaded from central controller 200 into the transponder, which may be indicative of (1) a total distance which the operator is permitted to travel, (2) a geographical area in which the vehicle may only be operated, (3) allowed times and dates of operation, such as (i) the specific hours during the day when the vehicle may be operated or (ii) the specific dates on which it may be operated, (4) the total time of permitted operation, and (5) the permitted subsystems that the operator is allowed to use, and (6) messages that indicate required vehicle servicing) [Column 1, lines 52-54, Column 4, line 63 – Column 5, line 7].

Furthermore, while it is true that the vehicle operator (i.e., the customer) uses the vehicle to collect and transmit data, the vehicle operator initiates the collection and transmission of data. For example, when one person (person A) sends a letter to another person (person B) via the United States Post Office, the recipient (person B) receives the letter from the sender (person A) via the United States Post Office. In other words, the United States Post Office is the medium used in which to transmit and deliver the letter, but the letter is actually from the sender. Similarly, in Dix, the vehicle is the medium used in the collection and transmission of the data, but the vehicle operator initiates the collection and transmission steps. Thus, the Examiner asserts that Dix does indeed teach the step of accepting and storing a maintenance service content specified by a customer.

Applicant argues that Dix does not disclose or suggest "fetching... equipment information about the customer equipment according to the maintenance service content which has been loaded from the customer system".

The Examiner respectfully disagrees. As discussed above, Dix utilizes the vehicle to collect and transmit (i.e., fetch) data about the equipment (vehicle). The collected data associated with the vehicle is then analyzed, using the values indicative of the physical parameters of the vehicle (i.e., according to the maintenance service content) obtained from the vehicle equipment (i.e., from the customer system), along with previous service records, in order to decide whether maintenance is required (i.e., whether a condition for performing maintenance is satisfied). Furthermore, the Examiner points out that the operator operates the vehicle; thus, the operator is responsible for the usage of the vehicle that necessitates maintenance. Therefore, the Examiner asserts that Dix does indeed teach the step of fetching equipment information about customer equipment according to the maintenance service content loaded from the customer system.

Applicant argues that Dix does not teach or disclose the operator (customer) specifying a maintenance service content, and the central processor fetching the

equipment information (vehicle data) in accordance with that maintenance service content.

The Examiner respectfully disagrees. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., central processor fetching the equipment information) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Furthermore, Dix teaches that the vehicle operator uses the vehicle to collect and transmit data values indicative of the physical parameters regarding the operation and status of the vehicle, including total distance which the operator is permitted to travel, a geographical area in which the vehicle may only be operated, allowed times and dates of operation, total time of permitted operation, permitted subsystems that the operator is allowed to use, messages that indicate required vehicle servicing, the actual distance traveled by the vehicle, the date and times of specific events (such as the time the vehicle was started, the time the vehicle was stopped and the elapsed time of engine operation), time-triggered elapse records (such as service reminders and vehicle rental period expiration), vehicle conditions (such as a threshold or maximum engine load experienced by the vehicle during operation), the current odometer reading, vehicle status, fault, or error conditions experienced during operation (such as engine oil

pressure, engine oil temperature, engine coolant temperature, engine alternator current or voltage output, hydraulic fluid pressure, hydraulic fluid temperature, hydraulic fluid pressure), and the amount of consumables remaining in vehicle (such as fuel level, engine coolant level, engine oil level, and hydraulic fluid level) [Column 1, line 66 – Column 2, line 9, Column 4, line 63 – Column 5, line 25]. The data gathered by the vehicle is then analyzed to determine whether specific servicing is necessary for the vehicle, which may be routine servicing based at least upon the elapsed time of vehicle operation or distance traveled by the vehicle, or it can be based upon sensor readings indicative of engine or hydraulic pressures, temperatures, and levels. Data received from the vehicle can be combined with previous records of servicing, which in turn, may be used to determine whether future servicing is needed [Column 2, lines 10-34]. Thus, the Examiner asserts that Dix does indeed teach the step of having an operator (vehicle operator) specifying maintenance service content (the data collected by the operator using the vehicle), and fetching equipment information in accordance with said maintenance service content (analyzing collected data, in combination with previous service records).

In the previous Office Action mailed June 28, 2006, notice was taken by the Examiner that certain subject matter is old and well known in the art. Per MPEP 2144.03(c), these statements are taken as admitted prior art because no traversal of this statement was made in the subsequent response. Specifically, it has been taken as prior art that:

- It is old and well known in the service arts that the cost incurred to perform a task include that of materials and labor

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1-15 and 17-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Dix (U.S Patent ##6,677,854).

As per claim 1, Dix teaches an equipment maintenance work assisting method comprising:

(a) accepting and storing a maintenance service content which a customer has specified from a customer system and information indicating a range that can be disclosed about a customer equipment **(periodically storing a plurality of values indicative of physical parameters of a vehicle in an electronic memory of the vehicle; data stored may include numeric values that are remotely downloaded from central controller 200 into the transponder, which may be indicative of (1) a total distance which the operator is permitted to travel, (2) a geographical area in which the vehicle may only be operated, (3) allowed times and dates of operation, such as (i) the specific hours during the day when the vehicle may be operated or (ii) the specific dates on which it may be operated, (4) the total time of permitted operation, and (5) the permitted subsystems that the operator is allowed to use, and (6) messages that indicate required vehicle servicing)** [Column 1, lines 52-54, Column 4, line 63 – Column 5, line 7];

(b) fetching and analyzing equipment information about the customer equipment according to the maintenance service content which has been loaded from the customer system, to decide whether a condition for performing maintenance is satisfied **(By analyzing the data associated with the vehicle, the central controller can take one or more actions relating to the servicing and maintenance of the vehicle. For example, it can determine whether specific servicing is necessary for the vehicle; the information stored in microcontroller 30 of the transponder may also include data downloaded from the vehicle itself, such as (1) the actual distance traveled by the vehicle, (2) the date and times of specific events, such as**

the time the vehicle was started, the time the vehicle as stopped and the elapsed time of engine operation, (3) time-triggered elapse records, such as service reminders and vehicle rental period expiration, (4) vehicle conditions, such as a threshold or maximum engine load experienced by the vehicle during operation, (5) the current odometer reading, (6) vehicle status, fault, or error conditions experienced during operation, such as engine oil pressure, engine oil temperature, engine coolant temperature, engine alternator current or voltage output, hydraulic fluid pressure, hydraulic fluid temperature, hydraulic fluid pressure, and (7) the amount of consumables remaining in vehicle, such as fuel level, engine coolant level, engine oil level, and hydraulic fluid level) [Column 1, lines 52-54, Column 2, lines 15-19, Column 5, lines 8-25]; and

(c) when it is decided that maintenance is required, creating a maintenance service assisting program for maintenance order including information that is a basis of determining the maintenance is required **(The central controller can also combine any of the data received from the vehicle with data previously received from the vehicle or with previous records of servicing stored in the central controller, which may include data entered into the central controller by service personnel that have serviced the vehicle, such as the date and time of the servicing and the type of servicing performed. This data, in turn, maybe used by the controller to determine whether future servicing is needed as well by combining the data communicated from the vehicle with the data indicative of past servicing)** and information required for maintenance order, and transmitting the program to the

customer via a network **(Whenever the central controller determines that servicing is necessary, it takes one or more actions. These actions may include transmitting a signal back to the vehicle over a wireless link. This signal sent to the vehicle directs the vehicle to display a message to the operator indicating that the operator takes some vehicle-related action)** [Column 2, lines 39-41].

As per claim 4, Dix teaches the equipment maintenance work assisting method according to claim 1, further comprising the steps of:

(a) accepting, in addition to the maintenance service content, further equipment information of the customer equipment that can be disclosed, and creating and storing statistical data about the equipment maintenance **(Controller 38 receives information from the other controllers in the form of packetized data transmitted over bus 44. These packets include data gathered by the other controllers indicating vehicle status, such as elapsed hours of engine operation, engine RPM, engine load, engine throttle position, the distance traveled by the vehicle, engine oil level, pressure and temperature, engine coolant level and temperature, hydraulic fluid level, temperature and pressure, and engine alternator output (both current and voltage))** [Column 6, lines 26-24]; and

(b) transmitting the statistical data to a customer system which has made a request for the data **(Controller 38 gathers a wide range of data and stores it in the transponder. All of this data is downloaded to controller 200 via transceiver 202)** [Column 13, lines 1-3].

As per claim 17, Dix teaches the method according to claim 1 further comprising connecting the maintenance work assisting server to the customer systems via the network so as to assist the customer systems **(Central controller 200 is configured to transmit signals to transponder 20, which, in turn, transmits to vehicle 10; Controller 38 gathers failure records and vehicle status information, and saves it in its memory circuits. Controller 38 later transmits this data to central controller 200 (via transponder 20) for it to use. Transponder 20 functions as a way of transporting data between system 12 and central controller 200. The data saved includes (1) data indicative of controller malfunctions, (2) sensor readings, (3) vehicle location (from receiver 56), (4) elapsed time of engine operation, and (5) distance traveled by the vehicle)** [Column 3, lines 57-59, Column 6, line 65 – Column 7, line 6].

As per claim 2, Dix teaches an equipment maintenance work assisting method comprising:

(a) accepting and storing an available maintenance work menu from respective equipment maintenance service enterprise systems **(Controller 200 maintains the list of required procedures for each particular vehicle)** [Column 15, lines 48-49]; and

(b) when a maintenance order from a customer system to an equipment maintenance service enterprise is accepted, creating a maintenance enterprise

assisting program that includes information required for fetching the equipment information of a customer who has submitted the maintenance order **(By analyzing the data associated with the vehicle, the central controller can take one or more actions relating to the servicing and maintenance of the vehicle. For example, it can determine whether specific servicing is necessary for the vehicle)** and transmitting the program to the equipment maintenance service enterprise via a network **(Whenever the central controller determines that servicing is necessary, it takes one or more actions. These actions may include transmitting a signal back to the vehicle over a wireless link. This signal sent to the vehicle directs the vehicle to display a message to the operator indicating that the operator takes some vehicle-related action)** [Column 2, lines 15-19, 39-41].

As per claim 5, Dix teaches the equipment maintenance work assisting method according to claim 2, further comprising the steps of:

(a) accepting, in addition to the maintenance service content, equipment information of the customer equipment which can be disclosed and creating statistical data concerning the equipment maintenance **(Controller 38 receives information from the other controllers in the form of packetized data transmitted over bus 44. These packets include data gathered by the other controllers indicating vehicle status, such as elapsed hours of engine operation, engine RPM, engine load, engine throttle position, the distance traveled by the vehicle, engine oil level, pressure and temperature, engine coolant level and temperature, hydraulic fluid**

level, temperature and pressure, and engine alternator output (both current and voltage)) [Column 6, lines 26-24]; and

(b) upon reception of a request from an equipment maintenance service enterprise, transmitting the statistical data to the equipment maintenance service enterprise system **(Controller 38 gathers a wide range of data and stores it in the transponder. All of this data is downloaded to controller 200 via transceiver 202)** [Column 13, lines 1-3].

As per claim 18, Dix teaches the method according to claim 2 further comprising connecting the maintenance work assisting server to the equipment maintenance service enterprise systems **(Central controller 200 is configured to transmit signals to transponder 20, which, in turn, transmits to vehicle 10; Monitoring controller 38 is coupled to a satellite navigation receiver 56 that is configured to receive radio transmissions from satellites and to convert them into data indicative of the vehicle's current location such as latitude and longitude. Controller 38 is also coupled to vehicular radio transceiver 14 that, in turn, communicates with transponder 20; The link between controller 200 and the transceiver need not be a serial communications link, but could be via a standard modem, a DSL modem, a network communication card communicating with a LAN or WAN)** [Column 3, lines 57-59, Column 5, lines 36-41, Column 19, lines 41-44].

As per claim 3, Dix teaches an equipment maintenance work assisting method comprising:

(a) accepting and storing a maintenance service content which a customer has specified from a customer system and information indicating a range that can be disclosed about a customer equipment **(periodically storing a plurality of values indicative of physical parameters of a vehicle in an electronic memory of the vehicle)** [Column 1, lines 52-54];

(b) accepting and storing an available maintenance work menu from respective equipment maintenance service enterprises **(Controller 200 maintains the list of required procedures for each particular vehicle)** [Column 15, lines 48-49];

(c) fetching and analyzing equipment information about the customer equipment according to a maintenance service content which has been loaded from the customer system, and deciding whether a condition for performing maintenance is satisfied **(By analyzing the data associated with the vehicle, the central controller can take one or more actions relating to the servicing and maintenance of the vehicle. For example, it can determine whether specific servicing is necessary for the vehicle)** [Column 2, lines 15-19];

when it is decided that maintenance is required, creating a maintenance service assisting program that includes information necessary for maintenance order, including identification of an equipment maintenance service enterprise, **(The central controller can also combine any of the data received from the vehicle with data previously received from the vehicle or with previous records of servicing stored in the**

central controller, which may include data entered into the central controller by service personnel that have serviced the vehicle, such as the date and time of the servicing and the type of servicing performed. This data, in turn, maybe used by the controller to determine whether future servicing is needed as well by combining the data communicated from the vehicle with the data indicative of past servicing) and transmitting the program to the customer via a network **(Whenever the central controller determines that servicing is necessary, it takes one or more actions. These actions may include transmitting a signal back to the vehicle over a wireless link. This signal sent to the vehicle directs the vehicle to display a message to the operator indicating that the operator takes some vehicle-related action)** [Column 2, lines 39-41]; and

upon acceptance of a maintenance order from a customer system to an equipment maintenance service enterprise, creating a maintenance enterprise assisting program that includes information necessary for fetching the equipment information of the customer who has submitted the maintenance order, and transmitting the maintenance enterprise assisting program to the equipment maintenance service enterprise system via the network **(Whenever the central controller determines that servicing is necessary, it takes one or more actions. These actions may include transmitting a signal back to the vehicle over a wireless link. This signal sent to the vehicle directs the vehicle to display a message to the operator indicating that the operator takes some vehicle-related action)** [Column 2, lines 15-19, 39-41].

As per claim 19, Dix teaches the method according to claim 3 further comprising connecting the maintenance work assisting server to customer systems and equipment maintenance service enterprise systems via the network so as to assist the customer systems **(Central controller 200 is configured to transmit signals to transponder 20, which, in turn, transmits to vehicle 10; Monitoring controller 38 is coupled to a satellite navigation receiver 56 that is configured to receive radio transmissions from satellites and to convert them into data indicative of the vehicle's current location such as latitude and longitude. Controller 38 is also coupled to vehicular radio transceiver 14 that, in turn, communicates with transponder 20; The link between controller 200 and the transceiver need not be a serial communications link, but could be via a standard modem, a DSL modem, a network communication card communicating with a LAN or WAN)** [Column 3, lines 57-59, Column 5, lines 36-41, Column 19, lines 41-44].

As per claim 6, Dix teaches a maintenance work assisting server comprising:

(a) a communication block for communication with customer systems via a network **(Whenever the central controller determines that servicing is necessary, it takes one or more actions. These actions may include transmitting a signal back to the vehicle over a wireless link. This signal sent to the vehicle directs the vehicle to display a message to the operator indicating that the operator takes some vehicle-related action)** [Column 2, lines 39-41];

(b) a profile storage block for accepting and storing a maintenance service content requested by a customer via a customer system **(periodically storing a plurality of values indicative of physical parameters of a vehicle in an electronic memory of the vehicle)** [Column 1, lines 52-54];

(c) an equipment data storage block for storing equipment information concerning a customer equipment of the customers registered (loaded) in the profile recording block according to the maintenance service content **(By analyzing the data associated with the vehicle, the central controller can take one or more actions relating to the servicing and maintenance of the vehicle. For example, it can determine whether specific servicing is necessary for the vehicle)** [Column 2, lines 15-19]; and

(d) an analysis block for analyzing the equipment information recorded in the equipment data recording block, deciding whether maintenance of the equipment is required **(The central controller can also combine any of the data received from the vehicle with data previously received from the vehicle or with previous records of servicing stored in the central controller, which may include data entered into the central controller by service personnel that have serviced the vehicle, such as the date and time of the servicing and the type of servicing performed. This data, in turn, maybe used by the controller to determine whether future servicing is needed as well by combining the data communicated from the vehicle with the data indicative of past servicing)**, and when maintenance is required, creating a maintenance service assisting program for use in maintenance

order and transmitting the program to a corresponding customer system via the communication block **(Whenever the central controller determines that servicing is necessary, it takes one or more actions. These actions may include transmitting a signal back to the vehicle over a wireless link. This signal sent to the vehicle directs the vehicle to display a message to the operator indicating that the operator takes some vehicle-related action)** [Column 2, lines 39-41].

As per claim 9, Dix teaches the maintenance work assisting server according to claim 6, wherein

(a) the profile storage block further stores equipment information of the customer equipment transmitted from the customer system which can be disclosed **(periodically storing a plurality of values indicative of physical parameters of a vehicle in an electronic memory of the vehicle)** [Column 1, lines 52-54]; and

(b) the analysis block generates statistic data concerning the equipment maintenance according to the equipment information of the customer equipment which has been recorded and can be disclosed **(Controller 38 receives information from the other controllers in the form of packetized data transmitted over bus 44. These packets include data gathered by the other controllers indicating vehicle status, such as elapsed hours of engine operation, engine RPM, engine load, engine throttle position, the distance traveled by the vehicle, engine oil level, pressure and temperature, engine coolant level and temperature, hydraulic fluid**

level, temperature and pressure, and engine alternator output (both current and voltage)) [Column 6, lines 26-24]; and

(c) the equipment data recording block further stores the statistic data and upon request from a customer system, transmits the statistic data to the customer system via the communication block **(Controller 38 gathers a wide range of data and stores it in the transponder. All of this data is downloaded to controller 200 via transceiver 202)** [Column 13, lines 1-3].

As per claim 11, Dix teaches the maintenance work assisting server according to claim 6, wherein:

(a) the maintenance service assisting program generated by the analysis block is a program causing a computer to execute the following:

(i) a reason present function for presenting a reason according to which the decision for maintenance is based upon **(Display 82 is configured to display a plurality of different messages indicating the data stored in transponder as well as information regarding the status of the vehicle, such as alarm or failure conditions including without limitation (1) engine coolant temperature too high, (2) engine coolant level too low, (3) engine oil temperature too high, (4) engine oil pressure too low, (5) engine oil level too low, (6) hydraulic fluid pressure too low, (7) hydraulic fluid temperature too high)** [Column 10, lines 1-11];

(ii) a service enterprise present function for displaying a service enterprise appropriate for providing the maintenance service **(For each maintenance**

procedure, controller 200 maintains in device 209 a table of required materials/supplies/tools, the required skill level of maintenance personnel, an the locations at which the maintenance may be performed) [Table 2, Column 15, lines 15-20];

(iii) a basis present function for presenting the basis upon request **(Controller 200 gathers vehicle status information (e.g. oil temperature) from several vehicles. Controller 200 saves engine oil temperature data, engine hours and mileage from each transponder (among the other vehicle parameters). It combines this oil temperature data with data similarly downloaded and saved from other vehicles. It averages the oil temperature versus engine hour data for all the vehicles at each of a plurality of engine hours. From this, an average oil temperature versus engine hour data set is produced. Controller 200 has oil temperature data from several different vehicles over several different time intervals of oil use, controller 200 averages the oil temperatures from several different vehicles for the same time interval. From this data, a plot of average oil temperature versus the age of that oil (in hours of engine use) is developed. This plot will typically show that average oil temperature increases as the oil ages – i.e. as the engine is operated longer and longer with the same oil. Controller 2000 then looks up the age of the oil, (either in elapsed mileage of the vehicle or engine hours on a particular oil change) corresponding to 100 degrees Celsius. At 1000 degrees Celsius, the oil is due to be replaced. Controller 20 then saves this new**

mileage or engine hour value for determining if an oil change is necessary) [Column 14, lines 13-65];

(iv) a profile modification input acceptance function for accepting modification input when a request for modifying the customer profile is received **(Once a vehicle has been serviced, the locally-based maintenance person accesses terminal 214 to enter a record indicative of the service performed, the vehicle that was serviced, and other data indicative of the vehicle's status during servicing, such as the vehicle's mileage or engine hours at servicing. The data is stored in storage device 209 for future reference by controller 200)** [Column 18, lines 6-15]; and

(v) an order specifying function for accepting an order specification **(Controller 200 electronically contacts each of the maintenance personnel that have been scheduled to perform maintenance procedures by transmitting an email message to maintenance personnel it selected to perform the maintenance procedures)** [Column 17, lines 16-20].

As per claim 12, Dix teaches the maintenance work assisting server according to claim 6, wherein:

the maintenance service assisting program displays the characteristic values, inspection cycle and inspection content of the customer equipment in comparison to an average value of the identical apparatus and standard deviation data **(Controller 200 gathers vehicle status information (e.g. oil temperature) from several vehicles.**

Controller 200 saves engine oil temperature data, engine hours and mileage from each transponder (among the other vehicle parameters). It combines this oil temperature data with data similarly downloaded and saved from other vehicles. It averages the oil temperature versus engine hour data for all the vehicles at each of a plurality of engine hours. From this, an average oil temperature versus engine hour data set is produced. Controller 200 has oil temperature data from several different vehicles over several different time intervals of oil use, controller 200 averages the oil temperatures from several different vehicles for the same time interval. From this data, a plot of average oil temperature versus the age of that oil (in hours of engine use) is developed. This plot will typically show that average oil temperature increases as the oil ages – i.e. as the engine is operated longer and longer with the same oil. Controller 2000 then looks up the age of the oil, (either in elapsed mileage of the vehicle or engine hours on a particular oil change) corresponding to 100 degrees Celsius. At 1000 degrees Celsius, the oil is due to be replaced. Controller 20 then saves this new mileage or engine hour value for determining if an oil change is necessary) [Column 14, lines 13-65].

As per claim 20, Dix teaches the maintenance work assisting server according to claim 6, wherein the respective customer systems are connected via the network and the server assists the customers in an equipment maintenance work via the network **(Central controller 200 is configured to transmit signals to transponder 20, which, in turn, transmits to vehicle 10; Monitoring controller 38 is coupled to a satellite**

navigation receiver 56 that is configured to receive radio transmissions from satellites and to convert them into data indicative of the vehicle's current location such as latitude and longitude. Controller 38 is also coupled to vehicular radio transceiver 14 that, in turn, communicates with transponder 20; The link between controller 200 and the transceiver need not be a serial communications link, but could be via a standard modem, a DSL modem, a network communication card communicating with a LAN or WAN) [Column 3, lines 57-59, Column 5, lines 36-41, Column 19, lines 41-44].

As per claim 7, Dix teaches a maintenance work assisting server comprising:

(a) a communication block for communicating via a network with respective equipment maintenance service enterprises **(Whenever the central controller determines that servicing is necessary, it takes one or more actions. These actions may include transmitting a signal back to the vehicle over a wireless link. This signal sent to the vehicle directs the vehicle to display a message to the operator indicating that the operator takes some vehicle-related action)** [Column 2, lines 39-41];

(b) a profile recording block for accepting available maintenance work menu loaded by the respective equipment maintenance service enterprises and storing the menu **(Controller 200 maintains the list of required procedures for each particular vehicle)** [Column 15, lines 48-49]; and

(c) an analysis block for accepting a maintenance order from a customer system to a maintenance service enterprise and creating a maintenance enterprise assisting program that includes information for fetching equipment information of a customer which has ordered the maintenance and that is used for performing the maintenance **(By analyzing the data associated with the vehicle, the central controller can take one or more actions relating to the servicing and maintenance of the vehicle. For example, it can determine whether specific servicing is necessary for the vehicle)**, and transmitting the program via the communication block to the corresponding maintenance service enterprise system **(Whenever the central controller determines that servicing is necessary, it takes one or more actions. These actions may include transmitting a signal back to the vehicle over a wireless link. This signal sent to the vehicle directs the vehicle to display a message to the operator indicating that the operator takes some vehicle-related action)** [Column 2, lines 15-19, 39-41].

As per claim 10, Dix teaches the maintenance work assisting server according to claim 7, wherein:

(a) the profile recording block further stores the equipment information of the customer equipment that is transmitted from the customer system and can be disclosed **(periodically storing a plurality of values indicative of physical parameters of a vehicle in an electronic memory of the vehicle)** [Column 1, lines 52-54];

(b) the analysis block generates statistic data concerning the equipment maintenance according to the equipment information of the respective customer equipment that is recorded and that can be disclosed **(Controller 38 receives information from the other controllers in the form of packetized data transmitted over bus 44. These packets include data gathered by the other controllers indicating vehicle status, such as elapsed hours of engine operation, engine RPM, engine load, engine throttle position, the distance traveled by the vehicle, engine oil level, pressure and temperature, engine coolant level and temperature, hydraulic fluid level, temperature and pressure, and engine alternator output (both current and voltage))** [Column 6, lines 26-24]; and

(c) the equipment data recording block further stores the statistic data, and when a request is made from a maintenance service enterprise system, the equipment data recording block transmits the statistic data to the maintenance service enterprise via the communication block **(Controller 38 gathers a wide range of data and stores it in the transponder. All of this data is downloaded to controller 200 via transceiver 202)** [Column 13, lines 1-3].

As per claim 13, Dix teaches the maintenance work assisting server according to claim 7, wherein:

the maintenance enterprise assisting program created by the analysis block is a program causing a computer to execute the following:

(i) a reason present function for presenting a reason according to which the decision for maintenance is based upon **(Display 82 is configured to display a plurality of different messages indicating the data stored in transponder as well as information regarding the status of the vehicle, such as alarm or failure conditions including without limitation (1) engine coolant temperature too high, (2) engine coolant level too low, (3) engine oil temperature too high, (4) engine oil pressure too low, (5) engine oil level too low, (6) hydraulic fluid pressure too low, (7) hydraulic fluid temperature too high)** [Column 10, lines 1-11];

(ii) an object customer/equipment display function for displaying a customer and equipment to receive the maintenance service **(Controller 200 electronically contacts each of the maintenance personnel that have been scheduled to perform maintenance procedures by transmitting an email message to maintenance personnel it selected to perform the maintenance procedures. This email message preferably includes data indicative of the vehicle to be repaired, the time and date of the maintenance, the location of the maintenance and the tools and supplies needed for the maintenance)** [Column 17, lines 16-24];

(iii) a basis present function to display a basis when requested to display the basis **(Controller 200 gathers vehicle status information (e.g. oil temperature) from several vehicles. Controller 200 saves engine oil temperature data, engine hours and mileage from each transponder (among the other vehicle parameters). It combines this oil temperature data with data similarly downloaded and saved from other vehicles. It averages the oil temperature versus engine hour**

data for all the vehicles at each of a plurality of engine hours. From this, an average oil temperature versus engine hour data set is produced. Controller 200 has oil temperature data from several different vehicles over several different time intervals of oil use, controller 200 averages the oil temperatures from several different vehicles for the same time interval. From this data, a plot of average oil temperature versus the age of that oil (in hours of engine use) is developed. This plot will typically show that average oil temperature increases as the oil ages – i.e. as the engine is operated longer and longer with the same oil. Controller 2000 then looks up the age of the oil, (either in elapsed mileage of the vehicle or engine hours on a particular oil change) corresponding to 100 degrees Celsius. At 1000 degrees Celsius, the oil is due to be replaced. Controller 20 then saves this new mileage or engine hour value for determining if an oil change is necessary) [Column 14, lines 13-65];

(iv) a stop/start procedure display function for fetching and displaying information indicating the step procedure and start procedure of the object equipment **{Time/Date column denotes the time required to perform each maintenance task}** [Tables 3 and 4]; and

(v) an access allow processing function for processing about the accessing the customer data **(Once a vehicle has been serviced, the locally-based maintenance person accesses terminal 214 to enter a record indicative of the service performed, the vehicle that was serviced, and other data indicative of the vehicle's status during servicing, such as the vehicle's mileage or engine hours**

at servicing. The data is stored in storage device 209 for future reference by controller 200) [Column 18, lines 6-15].

As per claim 21, Dix teaches the maintenance work assisting server according to claim 7, wherein the server is connected to an equipment maintenance service enterprise system via the network for assisting the equipment maintenance service enterprise systems via the network **(Central controller 200 is configured to transmit signals to transponder 20, which, in turn, transmits to vehicle 10; Monitoring controller 38 is coupled to a satellite navigation receiver 56 that is configured to receive radio transmissions from satellites and to convert them into data indicative of the vehicle's current location such as latitude and longitude. Controller 38 is also coupled to vehicular radio transceiver 14 that, in turn, communicates with transponder 20; The link between controller 200 and the transceiver need not be a serial communications link, but could be via a standard modem, a DSL modem, a network communication card communicating with a LAN or WAN)** [Column 3, lines 57-59, Column 5, lines 36-41, Column 19, lines 41-44].

As per claim 8, Dix teaches a maintenance work assisting server comprising:

(a) a communication block for communicating with customer systems and equipment maintenance service systems via a network **(Whenever the central controller determines that servicing is necessary, it takes one or more actions. These actions may include transmitting a signal back to the vehicle over a**

wireless link. This signal sent to the vehicle directs the vehicle to display a message to the operator indicating that the operator takes some vehicle-related action) [Column 2, lines 39-41];

(b) a profile recording block for accepting an equipment maintenance service content requested from a customer system and storing a maintenance service content, and accepting an available maintenance work menu loaded by an equipment maintenance service enterprise and storing the menu **(Controller 200 maintains the list of required procedures for each particular vehicle)** [Column 15, lines 48-49]; and

(c) an analysis block for fetching equipment information concerning a customer equipment according to the maintenance service content from the customer system and analyzing the information **(By analyzing the data associated with the vehicle, the central controller can take one or more actions relating to the servicing and maintenance of the vehicle. For example, it can determine whether specific servicing is necessary for the vehicle)** [Column 2, lines 15-19];

(d) wherein when a maintenance condition is satisfied and a corresponding maintenance is decided to be performed, a maintenance service assisting program is created that includes information serving as a basis for requiring the maintenance and information required for maintenance order including identification of a maintenance service enterprise and the program is transmitted via the communication block to the corresponding customer system **(Once a vehicle is deemed to need a specific type of maintenance, controller 200 then proceeds to arrange the maintenance by**

determining the required supplies, materials and tools needed for maintenance, determining the personnel appropriate for the maintenance, and determining the available locations for the maintenance) [Column 15, lines 5-13], and

(e) upon acceptance of a maintenance order form a customer to a maintenance service enterprise via the communication block, a maintenance enterprise assisting program is created that includes information necessary for fetching the customer equipment information ordered by the customer and that is used for performing maintenance, and the program is transmitted via the communication block to the maintenance service enterprise system **(Whenever the central controller determines that servicing is necessary, it takes one or more actions. These actions may include transmitting a signal back to the vehicle over a wireless link. This signal sent to the vehicle directs the vehicle to display a message to the operator indicating that the operator takes some vehicle-related action)** [Column 2, lines 15-19, 39-41].

As per claim 14, Dix teaches the maintenance work assisting server according to claim 8, wherein:

the analysis block adds at least one of the following to the maintenance service assisting program and the maintenance enterprise assisting program:

customer equipment replacement timing **(For each procedure, controller 200 maintains in device 209 a table of required materials/supplies/tools)** [Table 2, Column 15, lines 16-18], advice to select a type of equipment for replacement, and a

maintenance enterprise and maintenance menu of the maintenance enterprise **(Controller 200 accesses a table containing data indicative of currently scheduled maintenance procedures)** [Table 3, Column 16, lines 4-6].

As per claim 15, Dix teaches the maintenance work assisting server according to claim 8, wherein

the analysis block includes a transmission decision block for deciding a transmission destination, a transmission timing, and a transmission frequency of the maintenance service assisting program by using at least one of the following:

(i) the customer profile **(Controller 200 electronically contacts each of the maintenance personnel that have been scheduled to perform maintenance procedures by transmitting an email message to maintenance personnel it selected to perform the maintenance procedures; {Car column of Table 4, as data is stored in a database table or tables that associated service records such that they can be retrieved using a unique vehicle identifier, such as a VIN number})** [Table 4, Column 17, lines 16-20, Column 18, lines 12-15];

(ii) the maintenance enterprise profile **(Controller 200 electronically contacts each of the maintenance personnel that have been scheduled to perform maintenance procedures by transmitting an email message to maintenance personnel it selected to perform the maintenance procedures; {Maintenance Type column of Table 4})** [Table 4, Column 17, lines 16-20];

(iii) equipment design information **(Controller 200 electronically contacts each of the maintenance personnel that have been scheduled to perform maintenance procedures by transmitting an email message to maintenance personnel it selected to perform the maintenance procedures; {Tools column of Table 4})** [Table 4, Column 17, lines 16-20];

(iv) repair information **(Controller 200 electronically contacts each of the maintenance personnel that have been scheduled to perform maintenance procedures by transmitting an email message to maintenance personnel it selected to perform the maintenance procedures)** [Column 17, lines 16-20]; and

(v) parts lot information **(Controller 200 electronically contacts each of the maintenance personnel that have been scheduled to perform maintenance procedures by transmitting an email message to maintenance personnel it selected to perform the maintenance procedures; {Supplies column of Table 4})** [Table 4, Column 17, lines 16-20].

As per claim 22, Dix teaches the maintenance work assisting server according to claim 8, wherein the server is connected to the respective customer systems and respective equipment maintenance service enterprise systems via the network for assisting the customer system and equipment maintenance service enterprises in an equipment maintenance work **(Central controller 200 is configured to transmit signals to transponder 20, which, in turn, transmits to vehicle 10; Monitoring controller 38 is coupled to a satellite navigation receiver 56 that is configured to**

receive radio transmissions from satellites and to convert them into data indicative of the vehicle's current location such as latitude and longitude. Controller 38 is also coupled to vehicular radio transceiver 14 that, in turn, communicates with transponder 20; The link between controller 200 and the transceiver need not be a serial communications link, but could be via a standard modem, a DSL modem, a network communication card communicating with a LAN or WAN) [Column 3, lines 57-59, Column 5, lines 36-41, Column 19, lines 41-44].

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dix (U.S Patent #6,677,854) as applied to claim 8 above.

As per claim 16, Dix does not explicitly teach the maintenance work assisting server according to claim 8, wherein

the analysis block decides a fee of the maintenance service assisting program or the maintenance enterprise assisting program transmitted, according to the contents of the customer profile or the maintenance enterprise profile.

Dix teaches a controller 200 that maintains a list of required procedures for each particular vehicle [Column 15, lines 48-49].and determines a unique combination of potential people, supplies and locations at which the maintenance can be performed [Column 16, lines 1-10].

However, it has been admitted as prior art, as a result of improperly and/or untimely challenged Official Notice, that it is old and well known in the service arts that the cost incurred to perform a task include that of materials and labor. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Dix to include the step of determining a fee of the maintenance service based on the staff, supply, and location required to perform scheduled maintenance because the resulting combination would provide users with an estimate for repairing problems or performing maintenance as suggested or required by evaluation of equipment performance.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Choi whose telephone number is (571) 272 6971. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PC

December 7, 2006

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